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Analysis Of Anemia and Kek Incidents in Pregnant Women Regarding Lbw Incidents at Lelilef Public Health Center

Nudia Safi*[1], Rifzul Maulina[2]
[1-2] Institut Teknologi, Sains dan Kesehatan Rs Dr. Soepraoen, Indonesia

** Corresponding author: rifzulmaulina@itsk-soepraoen.ac.id*

Abstract: *Low Birth Weight in newborns is influenced by the mother's nutritional history, such as Chronic Energy Deficiency (CED) and Iron Anemia (ABG). Nutritional status before and during pregnancy can affect fetal growth. If the mother's nutritional status is normal before and during pregnancy, it is likely to give birth to a healthy, full-term baby with a normal weight. The purpose of this study was to determine the effect of Anemia and CED in pregnant women on the incidence of LBW at Lelilef Health Center. Quantitative research design with a Retrospective Study approach. Independent variables are pregnant women with Anemia and CED, and Dependent variables are LBW. The study population is all newborns at Lelilef Health Center, amounting to 135 respondents. The study sample is all newborns at Lelilef Health Center with the Total Sampling technique. Statistical tests using Logistic Regression. The results of the study showed that most pregnant women with anemia gave birth to LBW, as many as 70 (51.9%), and almost half of pregnant women with CED gave birth to LBW, as many as 52 (38.5%). Data analysis using Logistic Regression Test obtained significant results, P value < a = 0.001 < 0.005, which means there is a relationship between the incidence of anemia and KEK in pregnant women and the incidence of LBW at Lelilef Health Center. Health workers must provide education regarding the consumption of Fe Tablets and nutritional intake during pregnancy.*

Keywords: *Anemia; KEK; LBW; Nutritional Status; Pregnant Women*

1. INTRODUCTION

Low birth weight (LBW) babies are one result of pregnant women suffering from chronic energy deficiency, which can affect their poor nutritional status. Anemia in pregnant women can affect placental formation, thus affecting the supply of nutrients from the mother to the fetus.

While cases of LBW caused by anemia in pregnancy globally have a prevalence of anemia in pregnant women worldwide of 41.8%. The prevalence of anemia in pregnant women is estimated at 48.2% in Asia, 57.1% in Africa, 24.1% in the Americas, and 25.1% in Europe. The 2018 Basic Health Research (Riskesdas) reported a decrease in the rate of chronic energy deficiency in women of childbearing age. In the 2013 Riskesdas, 24.2 percent of pregnant women experienced chronic energy deficiency. The 2018 Riskesdas found a decrease to 17.3 percent. On the other hand, the rate of chronic energy deficiency among non-pregnant women of childbearing age also decreased, from 20.8 percent in 2013 to 14.5 percent in 2018. Children born to mothers with chronic energy deficiency are at risk of low birth weight, i.e., less than 2.5 kg.

The majority of infant deaths were caused by low birth weight (LBW) (42.42%), severe asphyxia (18.18%), congenital abnormalities (15.15%), infections (9.09%), and the remainder were caused by other causes, including tuberculosis, milk aspiration, toxoplasmosis, sepsis,

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and cardiomyopathy, each accounting for 3%. Meanwhile, at the Lelilef Community Health Center in 2018, there were 135 births, of which 102 were low birth weight. There were 81 cases of anemia (60%) and 78 cases of chronic energy deficiency (CED). The problem with LBW babies is primarily the immaturity of their organ systems. Weight is an indicator of newborn health. The condition of LBW babies requires attention because low birth weight can generally cause health complications such as respiratory, digestive, central nervous system, cardiovascular, hematological, and immunological disorders.

From the data above, it can be concluded that in Indonesia, especially in East Java Province, the cumulative infant mortality rate (IMR) (LBW) remains high. Therefore, the appropriate solution to the above problems is for pregnant women to pay attention to their nutritional intake and regularly attend antenatal care (ANC) check-ups in the first trimester, at least once in the second trimester, and at least twice in the third trimester. As well as Health Workers as providers of health facilities and infrastructure, we must be more careful in addressing this problem, namely by providing counseling or health education to all pregnant women and their families without exception, regarding the importance of consuming FE tablets regularly during pregnancy, as well as good nutrition during pregnancy, a healthy lifestyle, and early detection of high-risk pregnancies.

2. RESEARCH METHOD

The research design is quantitative with a Retrospective Study approach. The Independent Variables are Pregnant Women with Anemia and KEK, and the Dependent Variable is LBW. The study population is all newborns at the Lelilef Health Center, totaling 135 respondents. The research sample is all newborns at the Lelilef Health Center. Statistical tests use Logistic Regression. The sampling technique used is Total Sampling.

3. RESULTS AND DISCUSSION

Table 1. Respondent characteristics.

No	Characteristics	ΣN	Σ%
1	**Age (years)**		
	<20	38	28
	20-35	54	40
	>35	43	32
2	**Education**		
	Elementary School	39	29
	Middle School	43	32

	High School	39	29
	University	14	10
3	**Occupation**		
	Housewife/Farmer	59	44
	Self-Employed	67	49
	Civil Servant	9	7
4	**Anemia**		
	Yes	78	58
	No	57	42
5	**KEK**		
	Yes	78	58
	No	57	42
6	**Low Birth Weight**		
	Yes	102	76
	No	33	24
	Total	**135**	**100**

Table 2. Analysis of Statistical Test Results with SPSS.

			Score	df	Sig.
Step 0	Variables	Anemia	12.941	1	.000
		KEK	7.903	1	.005
		Overall Statistics	13.117	2	.001

Based on the statistical test results using logistic regression: P-value $<\alpha = 0.000 < 0.005$, or H1, is accepted, indicating a relationship between anemia and low birth weight (LBW). P-value $<\alpha = 0.005 \leq 0.005$, or H1, is accepted, indicating a relationship between CED and low birth weight (LBW). P-value $<\alpha = 0.001 < 0.005$, indicating H0 is rejected and H1 is accepted, indicating a relationship between anemia and CED in pregnant women and low birth weight (LBW) at Lelilef Community Health Center.

DISCUSSION

Anemia in Pregnant Women at Lelilef Community Health Center

Table 1 shows that of the 135 respondents studied, the majority (81 respondents, 60%) had anemia, while 54 respondents (40%) did not.

Anemia in pregnancy is a condition in which the body has few red blood cells, or cells that cannot carry oxygen to various organs. The health condition of pregnant women is very important because it affects the condition of the body that will be born.[9]. Anemia during pregnancy is very dangerous for the mother and her fetus. The impact of anemia on pregnant women is abortion, premature birth, impaired fetal growth or low birth weight (LBW), antepartum hemorrhage, and premature rupture of membranes.

Anemia in pregnancy is a condition in which the mother's Hb level is <11 g% in the first and third trimesters, and <10.5 g% in the second trimester. Anemia in pregnancy is considered a "Potential Danger to Mother and Child," and therefore requires serious attention from all parties involved in healthcare.

Research shows that most pregnant women who experience anemia are aged 20-35. According to researchers, anemia in those aged 20-35 can occur due to many factors, including irregular consumption of Fe 90 Tablets during pregnancy, improper intake of iron, and caffeine, which interferes with optimal absorption. It can also be due to a lack of adequate nutritional intake. From the description above, the researcher concluded that the findings of the study contradicted previous theories and research, including Salmariantity's study.

CED in pregnant women at the Lelilef Community Health Center.

Based on table 1, it is known that of the 135 respondents studied, 78 respondents (57.8%) experienced KEK, while 57 respondents (42.2%) of the 135 respondents did not experience KEK.

In this case, if nutritional needs are not met, some of the baby's organs may not develop properly or as they should, but instead lose function or even cause mutual damage to the organs. Furthermore, organ damage may not be detected early, resulting in the baby being born with other organ problems.

Nutritional deficiencies in pregnant women are more likely to result in low birth weight (LBW) or general abnormalities rather than specific anatomical abnormalities. Prolonged and ongoing maternal malnutrition during pregnancy will have a more detrimental effect on the fetus than acute malnutrition.

The results of the study indicate that most pregnant women who experience CED are aged 20-35. This could be due to several factors, including a lack of adequate nutrition, low consumption of green vegetables, high-protein foods, and irregular vitamin intake from healthcare workers during antenatal care (ANC). Therefore, the findings in this study contrast with those of previous studies by Mulyaningrum (2011) and Kristiyanasari (2015).

Low Birth Weight (LBW) Incidence at Lelilef Community Health Center

Based on Table 1, it is known that of the 135 respondents studied, almost all of the pregnant women gave birth to 102 low birth weight babies (76%), while 33 babies (24%) were not born to low birth weight babies.

LBW babies are newborns whose birth weight is less than 2500 grams (Icesmi, 2017). According to Icesmi (2017), there are two types of LBW: pure prematurity (born at <37 weeks of gestation and having a weight appropriate for gestational age) and dysmaturity (born with a weight below the expected weight for gestational age).

According to Proverawati (2015), there are three types of LBW based on treatment and life expectancy: LBW (1500-2500 grams), LBW (<1500 grams), and LBW (<1000 grams). The most common cause of low birth weight (LBW) is premature birth. Other maternal factors include age, parity, placental factors such as vascular disease, twin/multiple pregnancies, and fetal factors.

Based on field research, almost all babies are born with low birth weight (LBW). This can be caused by poor maternal nutritional intake, which can be detected during the maternal midwifery examination (MULA), as well as iron deficiency.

The Relationship Between Anemia and Low Birth Weight (LBW) at Lelilef Community Health Center

Table 1 shows that of the 135 respondents studied, the majority of pregnant women were anemic and delivered low birth weight (70) (51.9%), while 11 (8.1%) did not deliver low birth weight. Calculations using SPSS yielded a P-value $<\alpha = 0.000 <0.005$, indicating that H0 is rejected and H1 is accepted, indicating a relationship between anemia in pregnant women and low birth weight (LBW) at Lelilef Community Health Center.

Anemia can disrupt or inhibit the growth of both body and brain cells. The cause can be a lack of nutrients, folic acid and vitamin B12, but iron deficiency anemia is more common.

From the results of research at the Lelilef Community Health Center, researchers concluded that the theory presented in the book and Melisa's 2013 study are highly consistent with the existing facts. The majority of pregnant women with anemia are more likely to deliver low birth weight babies (LBW) than those without anemia. This is due to the higher iron requirements during pregnancy.

Furthermore, the results of field research showed that mothers without anemia and low birth weight babies (LBW) are not all anemic. It is possible that pregnant women without anemia who deliver low birth weight babies (LBW) also experience other factors, such as maternal factors (age, parity, CED, previous history of low birth weight babies, abortion, too close pregnancies, preeclampsia, etc.), and fetal factors (chromosomal abnormalities, congenital infections), which can contribute to the development of low birth weight babies. This is in line with Merzalia's 2012 study. However, the researchers did not include other cases,

as they focused on only two cases: anemia and KEK. The results of this study align with Suryati's research in 2014.

Relationship between CED and Low Birth Weight (LBW) at Lelilef Community Health Center

Table 2 shows that of the 135 respondents studied, nearly half of the pregnant women experienced CED and delivered low birth weight (52 (38.5%) and 26 (19.3%). Calculations using SPSS yielded a P-value $<\alpha = 0.005 \leq 0.005$, indicating that H0 is rejected and H1 is accepted. This indicates a relationship between CED in pregnant women and low birth weight (LBW) at Lelilef Community Health Center. These results align with Trihardini's research (2014).

Based on the research findings and theory above, the researchers concluded that there is a relationship between CED in pregnant women and low birth weight (LBW). Well-being during pregnancy significantly impacts the fetus. A growing baby requires twice the amount of nutrition and energy to support its development and development. The results of this study align with Suryati's research (2014).

Maternal conditions with chronic energy deficiency (CED) during pregnancy result in a direct relationship between mother and fetus that is not fully fulfilled. Chronic energy deficiency makes mothers more prone to fatigue and weakness, which can affect fetal movement and activity. If this problem is not addressed promptly, it can result in low birth weight (LBW) or low birth weight (LBW).

Furthermore, the results of this study, which found that mothers without CED and giving birth to LBW babies, may be because not all pregnant women experience CED alone.

CED alone is also possible. It is also possible that pregnant women without CED who give birth to LBW may experience other factors, such as maternal factors (age, parity, anemia, previous history of LBW, previous abortion, too close pregnancies, preeclampsia, etc.), and fetal factors (chromosomal abnormalities, congenital infections), which can contribute to LBW. However, the researchers did not include other cases, as they focused on only two cases: anemia and CED. Health workers must provide education regarding the consumption of Fe tablets and nutritional intake during pregnancy.

4. CONCLUSION

a. The majority of all respondents experienced anemia, 81 respondents (60%) out of 135 respondents.

b. The majority of respondents experienced CED, 78 respondents (57.8%) out of 135 respondents.
c. Almost all pregnant women gave birth to LBW babies, 102 babies (76%) out of 135 respondents.
d. The results of the logistic regression test obtained a significance value of P < a = 0.000 < 0.005, meaning H0 was rejected and H1 was accepted. There is a relationship between the incidence of anemia in pregnant women and the incidence of LBW at the Lelilef Community Health Center.
e. The results of the regression test obtained a significance value of P < a = 0.005 < 0.005, meaning [H0 was rejected and H1 was accepted]. There is a relationship between the incidence of CED in pregnant women and the incidence of LBW at the Lelilef Community Health Center.

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